UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/465,145	05/07/2012	Zhengyu Dai	83242063	3723

28395 7590 02/03/2017

BROOKS KUSHMAN P.C./FGTL
1000 TOWN CENTER
22ND FLOOR
SOUTHFIELD, MI 48075-1238

EXAMINER
HLAVKA, DAVID J

ART UNIT	PAPER NUMBER
3659	

NOTIFICATION DATE	DELIVERY MODE
02/03/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@brookskushman.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ZHENGYU DAI, PETER JOHN GRUTTER, ROGER LYLE HUFFMASTER, HONG JIANG, and FELIX NEDOREZOV

Appeal 2014-007829[1]
Application 13/465,145[2]
Technology Center 3600

Before MURRIEL E. CRAWFORD, AMEE A. SHAH, and MATTHEW S. MEYERS, *Administrative Patent Judges*.

SHAH, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's final decision rejecting claims 1–20 under 35 U.S.C. § 102(b) as being anticipated by to Kitano (US 8,061,463 B2, iss. Nov. 22, 2011). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

---

[1] Throughout this opinion, we refer to the Appellants' Appeal Brief ("Appeal Br.," filed Feb. 6, 2014), Reply Brief ("Reply Br.," filed July 9, 2014), and Specification ("Spec.," filed May 7, 2012), and to the Examiner's Answer ("Ans.," mailed July 7, 2014) and Final Office Action ("Final Act.," mailed Jan. 29, 2014).

[2] According to the Appellants, the real party in interest is Ford Global Technologies, LLC. Appeal Br. 2.

STATEMENT OF THE CASE

The Appellants' invention "relates to controlling motor torque in a hybrid vehicle powertrain in the presence of changes in driver demand." Spec. ¶ 1.

Claims 1, 9, and 15 are the independent claims on appeal. Claim 1, which we reproduce below, is illustrative of the subject matter on appeal:

> 1. A method of controlling a hybrid vehicle having a traction motor between an engine and a transmission having a torque converter with a bypass clutch, comprising:
>
> engaging the bypass clutch to a position that provides a non-zero slip;
>
> controlling traction motor torque to prevent the slip from decreasing while the clutch is maintained in the position, in lieu of disengaging the clutch to increase the slip, in response to a decrease in driver demanded torque.

Appeal Br., Claims App. 1.

FINDINGS OF FACT

The findings of fact in the Analysis section below are supported at least by a preponderance of the evidence.

ANALYSIS

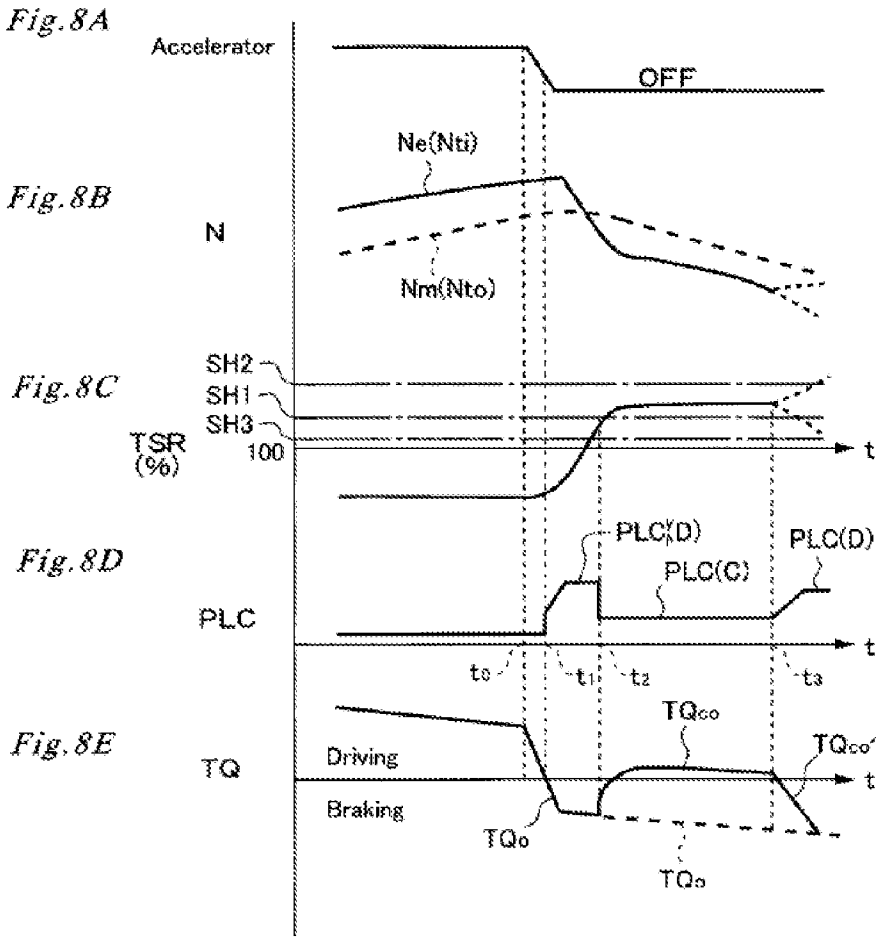
The Appellants argue independent claims 1, 9, and 15 as a group. *See* Appeal Br. 4. We select claim 1 as representative of the group; claims 9 and 15 stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The Appellants contend the rejection of claim 1 is in error because Kitano does not disclose "controlling motor torque to prevent a non-zero slip of the bypass clutch from decreasing while the clutch is maintained in an engaged position, and the motor is controlled in this manner in lieu of the

clutch being disengaged to prevent the slip from decreasing," as required by claim 1. Appeal Br. 4.

After careful review of the Appellants' arguments presented in the Appeal and Reply Briefs, we are not persuaded that the Examiner erred.

The Examiner relies on Example 4 and Figures 8A–8E of Kitano, reproduced below, for the contested limitation. Final Act. 3–4, Ans. 4–5.



Figures 8A–8E show the relationships between the accelerator, rotational speed, slip ratio, pressure, and torque in the fourth example of the control system.

Kitano discloses that at time t2, the slip ratio increases above the first threshold value; at this point, the cooperative lock-up control, in which the

lock-up clutch is engaged by the lock-up controlling means, and the cooperative operation of the motor generator are executed. Kitano, col. 4, ll. 49–54, col. 14, ll. 50–55. The slip ratio remains in the range between the first and second threshold values for a predetermined period of time, e.g., until time t3, at which point the cooperative operation of the motor generator is terminated. *Id.* at col. 14, l. 63–15, l. 4. After time t3, only the deceleration lock-up control is executed, and the slip ratio may decrease in response to a change in the driving condition. *Id.* at col. 15, ll. 6–17.

> We find unsupported the Appellants' interpretation of Kitano that the motor is controlled between times t2 and t3 as shown in Figure 8E to attempt to cause the slip ratio to decrease back towards 100%. As shown in Figure 8C, the attempt to cause the slip ratio to decrease by controlling the motor is not successful as the slip ratio stays within the range between the slip ratio thresholds SHI and SH2 as shown in Figure 8C.

Appeal Br. 7–8; *see also* Reply Br. 2. Rather, we agree with the Examiner's finding that Kitano discloses that between a time t2 and a time t3, the clutch is not disengaged; there is a reduction in engine speed; and the cooperative operation of the motor generator controls motor torque and "impacts the slip maintained" by maintaining the slip ratio in the range between the first and second thresholds, i.e., preventing the slip ratio from decreasing during that time period. Ans. 4 (citing Kitano, Example 4, Figs. 8A–8E). We note that although Kitano discloses that between times t2 and t3, "the control system preferably brings the lock-up clutch into engagement by the lock-up-controlling means while it is operating the motor generator cooperatively to reduce the slip ratio," (Kitano, col. 3, ll. 52–59; *see also* Appeal Br. 5, 6, 8; Reply Br. 2), Kitano does not specify that the slip ratio is actually reduced during that time period between times t2 and t3. As can be seen from Figure

8C, above, between times t2 and t3, during which the cooperative operation of the motor generator is executed, the slip ratio is constant, or, at least not reduced. After t3, the slip ratio can either increase or decrease.

We further find unpersuasive the Appellants' argument that Kitano does not teach the limitation because "the motor torque is controlled to prevent the slip from decreasing as opposed to being controlled to decrease (reduce) the slip as described by Kitano; and the motor torque is controlled in this manner in lieu of disengaging the clutch as opposed to engaging the clutch in conjunction with controlling the motor torque as described by Kitano." Appeal Br. 8. Rather, as discussed above, we find that Kitano's cooperative operation of the motor generator prevents the slip from decreasing while not disengaging the clutch, as required by the claim.

Based on the foregoing, we are not persuaded of error on the part of the Examiner and sustain the rejection of independent claim 1, independent claims 9 and 15, which fall with claim 1, and dependent claims 2–8, 11–14, and 16–20, which are not argued separately.

DECISION

The Examiner's rejection of claims 1–20 under 35 U.S.C. § 102(b) is AFFIRMED.

No time period of taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED